Measuring Ultraviolet A (UVA) Protection in Sunscreen Products

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Summary:

The NCI seeks parties interested in licensing a technique for using genetic biomarkers to evaluate sunscreen effectiveness.

Description of Technology:

Effective sunscreens are expected to block both UVA and UVB radiation. The Sun Protection Factor (SPF) label found on all over-the-counter sunscreen products is a better measure for UVB protection than UVA protection. Currently, there is no standard in vivo test to determine the amount of UVA protection in sunscreen products relating to the induction of cancer, despite the fact that many products are advertised as effectively blocking both UVA and UVB radiation. Despite widespread use of these sunscreens, melanoma incidence continues to rise. In considering this disparity, researchers at the NCI Dermatology Branch investigated effects of full-spectrum solar-simulated radiation and its non-UVB spectrum on the human skin transcriptome and analyzed gene expression profiles in irradiated sites and adjacent control sites using gene expression microarray and gene set analysis. The study found sets of genes useful for measuring UVA exposure in human skin and assessing sunscreen products for their ability to block UVA radiation.

Potential Commercial Applications:

-Would provide a standard for measuring UVA protection provided by sunscreens and other protective products.

Competitive Advantages:

-More definitive of tissue damage than other methodologies

Inventor(s):

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Development Stage:

-- Prototype

Publications:

C.L. Tock et al., PubMed ID: 21848663

Patent Status:

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Foreign (issued): EP 2542691 (validated in France, Germany and Great Britain); Australia 2011223937

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